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AUTHOR Williams, Andrew P.
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ABSTRACT

A study investigated whether there is a significant difference between the reading comprehension levels of eleventh grade students at a Catholic school in McKeesport, Pennsylvania, who incorporate free writing exercises into their literature class, and those who do not. Pre- and posttest mean reading comprehension scores were derived through the administration of the Nelson Denny Reading Comprehension Test Forms E and F to control and experimental groups of eleventh grade students. The pre- and posttest means were compared using t-tests for independent samples. The pre- and posttest scores of the experimental group were compared using a t-test for dependent measures. Results showed no significant difference between the mean reading comprehension scores of the two groups, as measured by the t-test for independent measures, even though the mean reading comprehension scores of both groups increased. However, a significant difference was found at the .05 level between the mean comprehension scores of the pre- and posttests of the experimental group. This indicates that the incorporation of free writing exercises into a literature class is a factor likely responsible for the significant increase in the experimental group's reading comprehension scores. (Three tables of data are included; 17 endnotes and an appendix of individual pretest and posttest scores are attached.) (SR)

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DEPARTMENT OF CURRICULUM AND INSTRUCTION

GRADUATE SCHOOL

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A COMPARISON BETWEEN THE READING COMPREHENSION OF ELEVENTH GRADE STUDENTS WHO INCORPORATE FREE WRITING EXERCISES INTO THEIR LITERATURE CLASS AND THOSE ELEVENTH GRADE STUDENTS WHO DO NOT INCORPORATE FREE WRITING INTO THEIR LITERATURE CLASS.

by

ANDREW P. WILLIAMS

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ABSTRACT

A Comparison Between The Reading Comprehension Of Eleventh Grade Students Who Incorporate Free Writing Exercises Into Their Literature Class and Those Eleventh Grade Students Who Do Not Incorporate Free Writing Into Their Literature Class

Statement of Problem

The purpose of this study was to determine whether there is a significant difference between the reading comprehension levels of eleventh grade students who incorporate free writing exercises into their literature class, and those eleventh grade students who do not.

Procedures

Pre and post test mean reading comprehension scores were derived through the administration of the Nelson Denny Reading Comprehension Test Forms E and F to control and experimental groups of eleventh grade students at Serra Catholic High School in McKeesport, Pennsylvania. The pre and post test means were compared using t-tests for independent samples. The pre and post test scores of the experimental group were compared using a t-test for dependent measures.

Findings and Conclusions

No significant difference was found between the mean reading comprehension scores of the control and experimental group, as measured by the t-test for independent measures, even though the mean reading comprehension scores of both groups increased.

This leads to the conclusion that any improvement in the reading comprehension scores of students who incorporate free writing into their class will be comparable to those students who do not.

However, a significant difference was found at the .05 level of confidence between the mean comprehension scores of the pre and post tests of the experimental group. This indicates that the incorporation of free writing exercises into a literature class is a factor likely responsible for the significant increase in the experimental group's reading comprehension scores.

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CHAPTER 1

Introduction

In almost every classroom in America, students are required to process information from books, articles. and other forms of printed materials. The effectiveness of these printed materials depends on the student's ability to comprehend the materials he/she has read.

"Reading comprehension is the process of creating personal meaning from a printed message."[1] The higher the level of reading comprehension, the more meaning a student is able to process from a printed source. Any educational technique that would enhance a student's reading comprehension could ultimately raise the student's own capacity for understanding the information he/she processes in a classroom through printed material.

There exists a connection between the process of reading and the process of writing. They mutually interact, involving many of the same cognitive functions such as thinking and experimenting. Along with cognitive functions, both processes are connected by affective measures such as the emotions and personal feelings of the reader and writer.[2] Since these processes are interactive, the use of writing techniques incorporated into a reading instruction program is a viable supplement for traditional methods of reading instruction. Free writing is a specific writing technique which allows a great deal of personal freedom for students to choose the topic and style of their writing. When students free write, they are allotted a specific amount of time where they write about any subject, in any style they wish. These writings are the personal products of the author and are not evaluated or seen by the instructor without the student author's permission.

The purposes of this study were twofold. First, it attempted to determine whether there was a significant difference between the mean reading comprehension scores of students who participated in reading instruction which incorporates free writing exercises, and students whose reading instruction does not include free writing. The second purpose of this study was to determine whether there was a significant difference at the end of the experimental period between the mean reading comprehension scores of those students who used free writing, as compared to their reading comprehension scores prior to the beginning of the experiment. Through a statistical analysis of the pre and post test data from both the control and experimental groups, the researcher will attempt to determine whether significant differences exist between the control and experimental group, and within the experimental group itself.

Statement of Problem

The purpose of this research was to determine whether there was a significant difference between the reading comprehension levels of eleventh grade students who incorporated free writing exercises into their literature class, and those eleventh grade students who did not. The research attempted to determine whether significant differences existed between the pre and post test comprehension scores of the experimental group. With the exception of the free writing exercise, the two groups received equal treatment.

Statement of Null Hypotheses

Null Hypothesis 1:

There will be no significant difference between the mean reading comprehension scores of those eleventh grade students who incorporate a five-minute free writing exercise at the beginning of each lesson in their literature course, and those students who do not incorporate a five-minute free writing exercise at the beginning of each lesson

in their literature course.

Null Hypothesis 2:

There will be no significant difference between the mean reading comprehension scores of the pre and post test of those students who incorporate a five-minute free writing exercise at the beginning of each lesson in their literature course.

CHAPTER 2

Review of Related Literature

Introduction

Research has shown that a relationship exists between the processes of reading and writing. Cognitive measures unite these processes and components of reading and writing such as writing apprehension, retention, and reading comprehension may be affected by a deliberate change in ones reading and writing pattern. The review shows how these two processes are connected and how they affect each by illustrating specific examples and studies of research into the processes of reading and writing.

Review of Literature

The process of reading and the process of writing are interactive. Each one utilizes many of the same cognitive functions. Holt and Vacca (1981) point out that both processes utilize thinking, experimenting, action, and practice in order to communicate. Both of these processes draw upon the same experiential base in order to form meaning through the use of phrases and sentence units.[3] Miller (1983) includes basic components of written language such as spelling, punctuation, and grammar as connectors between reading and writing.[4]

Gold (1981) emphasizes that reading is a comprehension creating process which is complemented by writing, a communication process.[5] Goodman and Goodman (1983) support Gold's interactive process model by illustrating the reliance of reading comprehension on writing. Writing is a process which results in a text whose clarity and quality are factors in determining the level of comprehension a reader will have when reading it. The higher the level of quality and clarity, the higher the level of meaning a

reader will get from the text.[6] Wittrock (1983) proposes that the connection between reading comprehension and writing can be summed up in the fact that reading comprehension involves acquiring and using some of the same skills needed in learning to write, such as practical application of text and ability to summarize what was read in a clear concise fashion.[7]

Studies done as early as the 1930s have shown the connection between the incorporation of writing techniques into reading classes and an improvement in reading skills. Studies done by Newlon (1930), Barton (1930), Dynes (1932), and Salisbury (1934), show that writing techniques such as note taking, outlining, and summarizing have positive effects on the reading retention and test performance of students who incorporate these techniques into their classrooms. These early studies provided a foundation for contemporary researchers like Glover, Plake, Roberts, Zimmer, and Palmere (1981), who have determined that students who incorporate the writing technique of paraphrasing into their reading classrooms have higher levels of recall than do students who do not use this technique.[8]

Culp and Spahn (1984), in their study of freshmen at the University of South Alabama, determined that there is a significant increase in the reading comprehension levels of freshmen who incorporate composition exercises in their reading instruction as opposed to those freshmen who do not. Research done by Shanahan (1980) and Karlin (1983) is also supported by Culp and Spahn's conclusion that sentence combining, the act of joining two or more small sentences into a larger one, has a positive effect on reading comprehension.[9]

Reading comprehension and ability are also affected by a student's level of writing apprehension. Pfeifer(1983) contends, in her study of college freshmen, that a decrease

in the level of a student's writing apprehension will show an improvement in the student's reading comprehension. Pfeifer states that "any experience in language that brings a student to a more intimate, comfortable station with words will transfer skill to the entire spectrum of language."[10]

Free or expressive writing is a writing technique which reduces apprehension levels in students because it allows the the freedom to choose the content and style of their writing. According to Rosenblatt (1988), free writing is a technique which enhances the linguistic experience of a student, and is free of anxieties about acceptability of subject, sequence, or mechanics.[11] It reduces writing apprehension by eliminating students' anxieties over formal rules of grammar and mechanics, and provides students with an excellent warm-up activity for reading by allowing elements of the experiential stream to be explored in written form.[12] As Elbow (1981) indicates, the importance of free writing lies not in the product that is produced, but rather in the process that produces it. Free writing is a process that generates ideas which reinforces the confidence students have in their choices of topics and writing abilities.[13]

The incorporation of writing activities into a reading classroom for the purpose of improving comprehension seems to take advantage of the shared cognitive functions involved in these two processes. Stotsky (1982), in her research on the relationship between reading and writing concludes that the combination of reading instruction and writing activities may help to teach reading comprehension in a very meaningful way.[14] Collins (1981) incorporated ten minutes of daily free writing exercises into the reading instruction courses in his study of freshmen at Rutgers University. His conclusion that free writing exercises, when incorporated into a reading program, have a positive effect on reading comprehension supports Stotsky's position.[15]

Penrose (1986) emphasizes that even though reading and writing share many of the same cognitive functions, incorporating writing techniques into a classroom does not guarantee that an increase in comprehension will take place. She notes that the variability of the individual differences among writers leads to a wide range in the learning levels of students. Some students benefit, but many do not.[16] Langer concurs with Penrose's position that the incorporation of writing techniques into a reading program is not a cureall for comprehension. He points out that the effects of analytical writing techniques are limiting, and that the writing of an essay does not necessarily encourage careful review and comprehension of the material.[17]

The research shows that a connection between reading and writing seems to exist, as based on the shared cognitive functions involved in the interaction of these two processes, such as thinking and experimenting. Studies also show that the incorporation of writing techniques into a reading classroom has varied effects on the reading levels of students. Generally, the research shows that the incorporation of specific writing techniques into a reading class has positive effects on readers' levels of retention, comprehension, and apprehension. Continuing, the research does not necessarily show that the incorporation of writing techniques has an automatic and positive effect on students' comprehension abilities. Individual differences among students lead to a wide range in the effectiveness of these techniques. Hence, no general statement can be made as to the level of the effectiveness of incorporating writing techniques into the reading classroom.

Further research is obviously needed to determine whether specific writing techniques have a significant effects on reading comprehension so as to determine which techniques have the greatest effect. Hence, it was the intention of this study to determine

whether the effects of the specific writing technique of free writing causes a significant difference between the reading comprehension scores of students who incorporate this technique into their reading instruction, and those students who do not.

CHAPTER 3

Methods and Procedures

Definition of Population

The population consisted of the eleventh grade students enrolled at Serra Catholic High School in McKeesport, Pennsylvania. Serra Catholic High School is in the McKeesport Area School District and is under the direction of the Diocese of Pittsburgh. McKeesport is an economically depressed community of 20,000, located approximately ten miles south of Pittsburgh, Pennsylvania. The students who attend Serra Catholic High School come from the surrounding communities of the Monongahela Valley, and are families ranging from middle to high incomes. Most of the providers of these households are white collar workers and professionals. The school is predominantly Caucasian, with a small number of Blacks and Hispanics, with a large amount of parental involvement in the religious, academic, and athletic activities of the school.

Method of Selecting Sample

The eleventh grade class of Serra Catholic High School is comprised of 135 students, each given the opportunity to take an eleventh grade level American Literature course. There are three sections of this course taught by one teacher. Pieces of paper with the code numbers of each of the classes were placed in an envelope. The researcher randomly chose one piece of paper from the envelope indicating the section by class code that would serve as the control group. The remaining two sections served as experimental groups. At the conclusion of the testing period, 26 students from the control group and the experimental group were randomly selected to constitute the sample.

Collection of Data

The study utilized the Pre-Test-Post-Test Design. The data were collected by first administering the Nelson Denny Reading Comprehension Test Form E to the three sections of eleventh grade American Literature classes at Serra Catholic High School. This pre-test was administered during the first week of March 1989, and testing was conducted in one session lasting approximately 25 minutes.

At the conclusion of the 30-day testing period, Form F of the Nelson Denny Reading Comprehension Test was given as a post test to those students were involved in the free writing exercise in their literature course (experimental group), and those students who did not incorporate free writing in their course (control group). This post-test was administered in the first week of May 1989, under the same conditions as the pre-test given in March. Total testing time was approximately 25 minutes.

Treatment of Data

The Nelson Denny Reading Comprehension Test Form E was administered as a pre-test, while the Form F served as the post-test. A two-sample independent t-test was applied to the means of the two pre-tests. Since no significant difference was found between the two pre-test means, a second independent t-test was applied to the post-test means. A two-tailed t-test for dependent measures was applied to the means of the pre and post tests of the experimental group. Significant differences for both the independent and dependent t-tests were measured at the .05 confidence level.

Definition of Terms

1) Free Writing- a timed writing exercise where the writer has the option to write on any topic, and in any style or form he/she wishes.

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2) Reading Comprehension- the process of creating personal meaning from a printed source.

3) Sentence Combining- the joining of two or more small sentences into one larger sentence for the purpose of increasing clarity.

4)Writing Apprehension- a hesitancy within student writers to write, caused by the fear that their writing will be rejected.

Definition of Instrument

The Nelson Denny Reading Comprehension Test was administered to determine the reading comprehension raw scores of the students in the study. Form E of the test was administered as a pre-test, and Form F served as the post-test. the Comprehension sections of Forms E and F both contain eight reading passages and a total of 36 questions, each with five answer choices. The time limit for the test is twenty minutes.

The eight reading passages were checked for readability by four measures: 1) the Corrected Dale-Chall Grade Level, 2)the Flesch Grade Level Equivalent, 3) the Fry Grade Scale, and 4) the Raygor Readability Estimate. To ensure consistency throughout the test, only the figures of the Corrected Dale-Chall measure were used to provide balance for Forms E and F. Three of the eight reading passages in each test have a difficulty level at grade 12 or below, while the remaining five have a difficulty level of grade 13 or above. This range of difficulty matches the range of reading abilities found at most single grade levels.

The standardization of The Nelson Denny Reading Test was conducted in November of 1979, on 25,000 students from the United States taken from three sample groups. Fourteen thousand students from 80 high schools formed the first sample, 6000 students

from 41 two-year college institutions comprised the second sample, and 5000 students from four-year college/university institutions composed the final sample.

A random sample of school districts was selected, based on socioeconomic conditions estimated from the 1970 census, geographical regions, and enrollment sizes of school districts. The .77 reliability for the Comprehension score was derived from the alternate-form-with-time-interval method. The Context Dependence Index, ranging from .26 to .44, was derived from a theoretical model and indices proposed by Hanna and Oaster (1979).

CHAPTER 4

Analysis of Data

Introduction

The purpose of this research was to determine whether there was a significant difference between the reading comprehension levels of students who incorporate free writing exercises into their literature class and those students who did not. This chapter illustrates the experimental procedure, statistical analysis of the collected data, and interpretation of the results.

Analysis of Data

Fifty two students participated in the study. Raw scores derived from the Nelson Denny Reading Comprehension Test were assumed to reflect a student's reading comprehension level. Statistical programs from Statistics with Finesse (Bolding, 1984) were used to make all statistical calculations. Upon completion of the running of the required statistical programs, the data were then analyzed to test the two null hypotheses.

Twenty six students comprised the experimental group and twenty six the control. Pre-test scores from the Nelson Denny Reading Comprehension Test Form E were used to determine the students' reading comprehension levels. The mean of the control group was 39.08, while the mean of the experimental group was 43. A two-sample independent t-test was run to determine whether there was a significant difference between the pre-test means. The critical value of t at the .05 alpha level with 50 degrees of freedom is 2.01. The calculated t-ratio was -1.3361. Therefore, no significant difference was found between the two means. The results of this analysis are presented in Table 1.

Table 1

ITEM	GROUP 1	GROUP 2
N	26	26
MEAN	39.08	43.00
STANDARD DEVIATION	11.90	9.09
T-VALUE	-1.3361	
OBSERVED SIGNIFICANCE LEVEL P	0.0923	
POINT BISERIAL CORRELATION	0.1857	

After a thirty-day testing period, reading comprehension scores from the Nelson Denny Reading Comprehension Test Form F were used to determine the students' post-test reading comprehension levels. The mean of the control group was 41.46, while the mean of the experimental group was 47.77. A two-sample independent t-test was applied to the post-test means to determine the presence of a significant difference. The critical value of t at the .05 alpha level with 50 degrees of freedom is 2.01, and the calculated t-ratio for the post-test means is 1.9503. Therefore, no significant difference was found between the two means. Since no significant difference was found between the post-test means, Null Hypothesis 1 was accepted. The results of this analysis are presented in table 2.

In reference to Null hypothesis 2, a two tailed t-test for dependent samples was used on both the pre-test and post-test means of the experimental group to determine whether there was a significant difference. The critical value of t at the .05 alpha level with twenty-five degrees of freedom is 2.06. The calculated t value was 2.99. Therefore, Null Hypothesis 2 was rejected, indicating that there was a significant difference between the pre-test and post-test means of the experimental group. The results of this analysis are presented in Table 3.

Table 2

ITEM	GROUP 1	GROUP 2
N	26	26
MEAN	41.46	47.77
STANDARD DEVIATION	13.07	10.06
T-VALUE	1.9503	
OBSERVED SIGNIFICANCE LEVEL P	0.0269	
POINT BISERIAL CORRELATION	0.2659	

Table 3

ITEM	SCORE 1	SCORE 2
N	26	26
MEAN	43	47.77
STANDARD DEVIATION	9.09	10.06
DIFFERENCE IN MEANS	4.77	
T-VALUE	2.99	
OBSERVED SIGNIFICANCE LEVEL P	0.0032	

Interpretation of Results

The results of this research show a significant increase in the reading comprehension levels of those students who incorporated free writing exercises into their literature class. The results also show that the comprehension scores of both the control and experimental group rose at different levels but not to the extent of significance. The significant increase in the reading comprehension scores of the experimental group is in agreement with Collins' (1979) study of freshmen at Rutgers University where he found a significant increase in the reading comprehension scores

of students who incorporated free writing exercises into their literature class.

These results indicate that incorporating free writing exercises into a literature class has a positive effect on the reading comprehension level of the students who utilize this writing technique. This increase in comprehension may be attributed to a balanced combination of the processes of reading and writing in which formal reading instruction, daily free writing, and the passage of time enhanced the ability of students to create meaning from a written text.

CHAPTER 5

Conclusions and Implications

Summary

In comparing the individual scores of the pre and post tests of both the experimental and control groups, there is evidence of an increase in their reading comprehension levels, as measured by the Nelson Denny Reading Comprehension Test. In the control group, the post-test scores of 14 students were higher than their pre-test scores, while eight students recorded lower scores, and four remained the same. Though the mean score rose 2.46 points, this increase is not considered significant. In the experimental group, 16 students showed an increase in test scores, while four students recorded lower scores and six remained the same. The mean score of the group rose by 4.6 points which is significant at the .05 alpha level.

There exists a significant difference between the pre and post-test scores of the experimental group. Since the control and experimental groups received identical treatment, it may be concluded that the free writing variable introduced into the experimental groups curriculum is a factor responsible for the significant increase in the group's reading comprehension scores.

When comparing the mean scores of the control group with the experimental group, statistical analysis revealed no significant difference. Both groups recorded an increase in mean comprehension scores, but the difference between the two groups was not significant. These results indicate that any improvement in the reading comprehension scores of students who incorporate free writing into their classes will be similar to the

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comprehension improvements of students who do not participate in daily free writing activities. From the results of this study it can be assumed that the introduction of a free writing variable into a literature class is not necessarily a significant factor in raising the students' reading comprehension levels when the class as a whole is compared to similar classes that did not incorporate free writing exercises into their curricula. With the passage of time and daily instruction, the comprehension levels of students, regardless of whether they engage in free writing should increase. This study has shown that the mean comprehension scores of the students who use free writing is higher than their non-free writing counterparts, but not to the extent of significance.

A second conclusion can be made concerning the increase in the mean reading comprehension scores of those students who utilizes the free writing exercise. Though it was expected that some improvement occur because of the ongoing reading instruction, this group's level of improvement was significant. This indicates that the incorporation of free writing into a literature class will have a significantly positive effect on reading comprehension levels.

Limitations of Study

The results of this study may be generalized to other populations of eleventh grade students which are comparable to the tested sample with respect to socioeconomic conditions and racial composition. Because of the highly subjective and personal nature of free writing,internal validity may be affected by the individual student's willingness to produce meaningful text on a daily basis. External validity may be affected by the students' home life, parental encouragement of academics, personal reading and writing habits, teacher experience, and academic diversity.

Implications of Study

The results of this study show that the inclusion of a free writing exercise at the beginning of a literature class has a positive effect on the reading comprehension levels of students who utilize this technique. An increase in reading comprehension is not necessarily confined to the particular subject in which the students do their free writing exercises. Instead, it would possibly affect the students' level of understanding of the written text within a wide range of subject matter. Thus, the level of understanding of math, science, and history texts would probably be affected by an overall increase in the student's level of reading comprehension.

An increase in reading comprehension brought about by the inclusion of free or other writing techniques into a curriculum should have lasting implications on the methodological approach to the teaching of reading and writing. An emerging paradigm of process-oriented composition instruction, combined with practical reading instruction, should enhance the mutually interacting properties of the processes of reading and writing. They should reinforce each other, thus providing students with a process-oriented model of writing and a workable approach to the comprehending of texts.

The combining of reading and writing instruction into a singular curriculum is the next logical step in the teaching of language arts. This should provide opportunities for improvements in reading comprehension and writing, which in turn should benefit the students in most of their classes. An increase in reading comprehension brought about by the interaction of writing and reading instruction should enhance most aspects of a student's education involving written texts, thus increasing the chances of he/she achieving academic success.

Suggestions For Further Research

This study has shown the effects of one specific writing technique on a population of eleventh grade students. Though the results indicate an increase in comprehension levels, further research is needed to determine to what extent free writing influences writing apprehension, the free flow of thought and the cognitive connectors of the processes of reading and writing. In regard to free writing, research is needed to determine whether its effectiveness varies with respect to a wide range of experimental populations.

Studies need to be done with students from all socioeconomic scales and academic levels in order to determine which students will benefit most from the inclusion of this and/or other writing techniques into their curricula. Research is also needed to determine whether free writing influences reading comprehension at different chronological ages and reading levels. This type of research will allow educators to determine whether to incorporate free writing programs into their curricula, and at which grade level and with which students where it would be most beneficial.

APPENDIX

Individual Pre-Test and Post-Test Scores

Table 1	Control Group		Table 2	Experimental Group	
Code	Pre-Test	Post-Test	Code	Pre-Test	Post-Test
101	42	36	201	48	54
102	24	22	202	34	38
103	46	43	203	48	46
104	30	34	204	34	34
105	46	56	205	34	16
106	42	46	206	40	52
107	36	32	207	34	40
108	52	38	208	50	64
109	24	36	209	32	52
110	54	54	210	32	44
111	52	64	211	54	54
112	34	44	212	46	46
113	22	16	213	44	48
114	56	58	214	58	54
115	56	56	215	42	54
116	54	64	216	54	60
117	44	48	217	34	42
118	28	42	218	34	40
119	44	36	219	48	48
120	14	18	220	50	44
121	26	26	221	60	60
122	26	36	222	32	42
123	46	50	223	52	52
124	40	50	224	38	58
125	42	42	225	52	58
126	36	32	226	34	42

Pre-Test scores derived from the Nelson Denny Comprehension Test Form E.

Post-Test scores derived from the Nelson Denny Comprehension Test Form F.

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